APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/987,097	11/13/2001	Byung Keun Lim	HI-0050	6526

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EXAMINER
CHO, HONG SOL

ART UNIT	PAPER NUMBER
2662	

DATE MAILED: 02/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ · Responsive to communication(s) filed on <u>*17 November 2005*</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16, 20-22 and 26-29* is/are rejected.

7)☒ Claim(s) *17-19 and 23-25* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1.   This office action is in response to the amendment filed on 11/17/2005. Claims 1-29 are

pending in the instant application.

Claim Rejections - 35 USC § 112, Second paragraph

2.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming
> the subject matter which the applicant regards as his invention.

3.   Claims 1-8, 27 and 28 are rejected under 35 U.S.C. 112, second paragraph, as being

indefinite for failing to particularly point out and distinctly claim the subject matter

which applicant regards as the invention.

Re claim 1, it is not clear what is meant by the phrase *"information of the dormant*

handoff" in the context of claim 1; i.e., it is not clear what information this could be,

other than that specified in the further limiting claim 2.

Re claim 4, it is not understandable as it is written.

Claims 2-8, 27 and 28 are similarly rejected because they are depend from clam 1.

Claim Rejections - 35 USC § 102

4.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102(e) that form

the basis for the rejections under this section made in this Office action:

(e) the invention was described in (1) an application for patent, published under section 122(b), by another
filed in the United States before the invention by the applicant for patent or (2) a patent granted on an
application for patent by another filed in the United States before the invention by the applicant for patent,
except that an international application filed under the treaty defined in section 351(a) shall have the effects
for purposes of this subsection of an application filed in the United States only if the international
application designated the United States and was published under Article 21(2) of such treaty in the English
language.

5.   Claims 11 and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Shafik et al

(provisional application 60/195378), hereinafter referred to as Shafik.

Re claim 11, Shafik discloses a process in which, a MSC receives a location

update request with a power-down notification from a MS (*receiving, at a mobile*

switching center (MSC), location renewal information of a mobile station that is

performing a dormant handoff, page 6, lines 13-16) and determines if a session is

dormant (*determining whether the mobile station is in a state for executing the dormant*

handoff, when the location renewal information is received, page 6, line 14). Shafik

discloses sending an indication of the authentification failure from the MSC to a BSC to

release its connection with the BSC (*releasing a radio packet link by transferring*

registration renewal information from the MSC to a first base station controller/packet

controller function, if the mobile station is in the state for executing the dormant handoff,

page 6, lines 12-15).

Re claim 13, Shafik discloses inherently a MSC/VLR storing information for a

serving packet control function.

Claims 14-16, 20-22 and 29 are rejected under 35 U.S.C. 102(e) as being anticipated by

Madour (provisional application 60/226486).

Re claims 14 and 20, Madour discloses a mobile station, a source PDSN that

communicates with a MS via a source BSC/PCF, through a first communication link,

while the MS is located within a service area of the source BSC/PCF, a target PDSN that

communicates with the mobile station, via a target BSC/PCF, through a second

communication link, after the mobile station has moved from the service area of the

source BSC/PCF to a service area of the target BSC/PCF, a mobile switching center

(MSC) that communicates a dormant handoff message to the source BSC/PCF, after the

second communication link is established, where the dormant handoff message initiates a

termination of the first communication link by the source PDSN and the source BSC/PCF

(figure on page 4). Madour discloses performing a dormant packet handoff during a first

communication link between a mobile station and a source packet data serving node

(PDSN) (figure on page 4). Madour discloses establishing a second communication link

between the mobile station and a target PDSN, after the mobile station has moved from a

service area of a source base station controller/packet control function (BSC/PCF) to a

service area of a target BSC/PCF (figure on page 4). Madour discloses the MSC sending

a handoff command to the serving BSC (*communicating a dormant handoff message

from a mobile switching center (MSC) to the source BSC/PCF,* figure on page 4).

Madour discloses the serving PCF sending a message to the serving PDSN to release the

connection between the nodes (*terminating the first communication link between the*

mobile station and the source PDSN, in response to the dormant handoff message, figure on page 4).

Re claims 15 and 21, Madour discloses a serving BSC sending a message to a MSC after an disconnected ack message is received from a serving PCF (*communicating from the source BSC/PCF to the MSC an acknowledgment of the dormant handoff message, after terminating the first communication link*, figure on page 4).

Re claims 16 and 22, Madour discloses terminating the first communication link without waiting for a registration renewal timer period, an upper layer point-to-point protocol (PPP) timer period, or a radio packet link timer period to expire (figure on page 4).

Re claim 29, Madour discloses a source BSC receiving a message of handoff command (*transferring a message to a packet controller of an original BSC/PCF to inform the packet controller of the original BSC/PCF that a mobile station has moved*, figure 4 on page 4). Madour discloses a source PCF sending a message to an old PDSN and sending a message from an old PDSN (*transmitting an A11 registration request message from the packet controller of the original BSC/PCF to an original PDSN and an A11 registration response message from an original PDSN to the packet controller of the original BSC/PCF*, figure 4 on page 4) and re-routing packet to new PDSN (*releasing a radio packet link at the original PDSN*, figure 4 on page 4).

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth
in section 102 of this title, if the differences between the subject matter sought to be patented and the prior
art are such that the subject matter as a whole would have been obvious at the time the invention was made
to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be
negatived by the manner in which the invention was made.

7.   Claims 1-5, 9, 10, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Madour in view of Shafik.

        Re claim 1, Madour discloses a Mobile Switching Center (MSC) sending a

handoff message to a target BSC and sending a handoff command message to a serving

BSC serving Base Station Controller (BSC) (figure on page 3). Madour fails to disclose

determining with a MSC whether a mobile station performs a dormant handoff into an

area of a destination BSC. Shafik discloses a MSC checking to see if a MS (mobile

station) is hosting dormant packet-data session and sending a location update message to

a BSC if the session is dormant (page 6, line 14). It would have been obvious to one

having ordinary skill in the art at the time the invention was made to modify Madour to

include Shafik for optimizing the use of packet resources by releasing a hanging packet

data connection when a MS performs a power-down while in a dormant packet-data

session.

        Re claims 2 and 4, Shafik provisional application discloses notifying MSC, at

dormant handoff, that the packet data is dormant by receiving the location update

message. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Madour to include Shafik for optimizing the use of packet resources by releasing a hanging packet data connection when a MS performs a power-down while in a dormant packet-data session.

Re claim 3, Madour discloses a connection being preset-up between a target PCF and a PSDN (packet data serving node) (*the information of the dormant handoff is provided after setting a radio packet link with the destination BSC/PCF (packet controller function) and a destination packet data serving node*, figure on page 3).

Re claim 5, Madour discloses all of the limitations of the base claim, but fails to teach releasing a radio packet link between an original BSC/PCF and a mobile station by transferring a registration request message from an original BSC/PCF to an original packet data serving node (PDSN). Shafik discloses a PCF triggering registration request to a PSTN for disconnecting a connection between a BSC and a MS (steps g-h on page 7). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Madour to include Shafik for optimizing the use of packet resources by releasing a hanging packet data connection when a MS performs a power-down while in a dormant packet-data session.

Re claim 9, Madour discloses a Mobile Switching Center (MSC) sending a handoff message to a target BSC and sending a handoff command message to a serving BSC serving Base Station Controller (BSC) (figure on page 3). Madour fails to disclose discriminating with a MSC whether a mobile station performs a dormant handoff into an area of a destination BSC. Shafik discloses a MSC checking to see if a MS (mobile

station) is hosting dormant packet-data session and sending a location update message to

a BSC if a session is dormant (page 6, line 14). It would have been obvious to one

having ordinary skill in the art at the time the invention was made to modify Madour to

include Shafik for optimizing the use of packet resources by releasing a hanging packet

data connection when a MS performs a power-down while in a dormant packet-data

session. Madour discloses all of the limitations of the base claim, but fails to teach

releasing a radio packet link between an original BSC/PCF and a mobile station by

transferring a registration request message from the original BSC/PCF to an original

packet data serving node (PDSN). Shafik discloses a PCF triggering registration request

to a PSTN for disconnecting a connection between a BSC and a MS (steps g-h on page

7). It would have been obvious to one having ordinary skill in the art at the time the

invention was made to modify Madour to include Shafik for optimizing the use of packet

resources by releasing a hanging packet data connection when a MS performs a power-

down while in a dormant packet-data session. Madour discloses the serving BSC sending

a clear complete message to the MSC (*transmitting a location renewal acknowledge

message from the original BSC/PCF to the mobile switching center*, figure on page 4).

Re claims 10 and 27, Madour discloses a source BSC receiving a message of

handoff command (*transferring a message to a packet controller of an original BSC/PCF

to inform the packet controller of the original BSC/PCF that a mobile station has moved,*

figure 4 on page 4). Madour discloses a source PCF sending a message to an old PDSN

and sending a message from an old PDSN (*transmitting an A11 registration request

message from the packet controller of the original BSC/PCF to an original PDSN and an*

A11 registration response message from an original PDSN to the packet controller of the original BSC/PCF, figure 4 on page 4) and re-routing packet to new PDSN (*releasing a radio packet link at the original PDSN*, figure 4 on page 4).

Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Madour in view of Shafik and further in view of Barna et al (USPUB 20020046277), hereinafter referred to as Barna.

Re claim 6, Madour and Shafik disclose all of the limitations of the base claim, but fail to disclose removing a visitor table of a corresponding mobile station when an original PDSN receives a registration request message from a original BSC/PCF; and transmitting charging data to a corresponding sever. Barna discloses closing of a multi-session by sending a message to a server (paragraph [0011], lines 2-6). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Madour to include Barna for temporarily storing the information of an MS entering the service area of the MSC and discarding the stored information when the MS moves into another service area so that the new accounting session would be correlated with the old accounting session.

Re claim 7, Madour discloses releasing a radio packet link in response to a registration request message (figure on page 3), but fails to disclose removing, at an original BSC/PCT, a radio packet link table of a mobile station. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Madour to discard a radio packet link table of the mobile station at BSC so that

BSC/PCF would be able to maintain or update a radio packet link table for optimized

function of packet resource management.

Re claim 8, Madour discloses a serving BSC informing a MSC that a handoff is

successful by sending a clear complete message after a PDSN sending to a serving PCF a

message (*the packet dormant handoff for the mobile station is completed at the original*

BSC/PCF by transmitting a location renewal acknowledge message from the original

BSC/PCF to the mobile switching center, after transmitting a response to the registration

from the original PDSN to the original BSC/PCF, figure on page 3).

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shafik.

Re claim 12, Shafik discloses all of the limitations of the base claim, but fails to

disclose a MSC receiving a registration renewal information of a MS through an

American national Standards Institute (ANSI)-41 message format. It would have been

obvious to one having ordinary skill in the art at the time the invention was made to

modify Madour to conform to the ANSI-41 message format that would meet the

requirements of compatibility to the wireless standards.

Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Madour.

Re claim 26, Madour discloses all of the limitations of the base claim, but fails to

disclose setting a lifetime field value of a registration request message to zero. It would

have been obvious to one having ordinary skill in the art at the time the invention was

made to modify Madour to set a lifetime field value of the clear command message to

zero to initiate a release of the resources that are no longer needed for optimized function

of packet resource management.

Allowable Subject Matter

8.   Claim 28 would be allowable if rewritten to overcome the rejection(s) under 35

U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the

limitations of the base claim and any intervening claims.

9.   Claims 17-19 and 23-25 are objected to as being dependent upon a rejected base claim,

but would be allowable if rewritten in independent form including all of the limitations of

the base claim and any intervening claims.

The following is an examiner's statement for reasons for allowance.

10.   Claims 17 and 23 are allowable over the prior art of record since the cited references

taken individually or in combination fail to particularly teach or fairly suggest <u>a method</u>

<u>of communicating from the source BSC/PCF to the source PDSN a registration request</u>

<u>message having a lifetime field value set to zero, in response to receiving the dormant</u>

<u>handoff message, releasing resources supporting the first communication link within the</u>

<u>source PDSN, in response to the registration request message, communicating to the</u>

<u>source BSC/PCF a registration response message having a lifetime field value set to zero,</u>

<u>after releasing the first communication link, and releasing resources supporting the first</u>

<u>communication link within the source BSC/PCF, in response to the registration response</u>

<u>message, wherein the zero value in the lifetime field of the registration request message</u>

informs the source PDSN that the first communication link is ready for termination, the

zero value in the lifetime field of the registration response message informs the source

BSC/PCF that the first communication link is ready for termination, and both the source

BSC/PCF and the source PDSN terminate the first communication link without waiting

for a registration renewal timer period to expire.

Claims 19, 25 and 28 are allowable over the prior art of record since the cited

references taken individually or in combination fail to particularly teach or fairly suggest

a method of withholding the communication of a registration renewal message to the

original BSC/PCF, during a period beginning after the original PDSN receives the

dormant handoff message and ending when the first communication link between the

mobile station and the original PDSN is terminated.

Response to Arguments

11.   Applicant's arguments filed on 11/17/2005 have been fully considered but they are not

persuasive.

Rejection under 35 USC § 102

Regarding claim 11, the Applicant argues that Shafik and Shafik provisional

application do not disclose receiving location renewal information of a mobile station that

is performing a dormant handoff and determining whether the mobile station is in a state

for executing the dormant handoff. The Examiner respectfully disagrees. Shafik's

provisional application discloses notifying MSC, at dormant handoff, that the packet data

is dormant by receiving the location update message. Therefore, the Examiner concludes that the rejection of claim 11 is proper.

Regarding claims 14 and 20, the Applicant argues that Madour and Madour provisional application do not disclose a dormant handoff. The Examiner respectfully disagrees. Madour provisional application discloses a dormant handoff, which provides a connection to new BSC/PCF as shown in a figure on page 3. The Examiner concludes that the rejection of claims 14 and 20 is proper.

Rejection under 35 USC § 103

Regarding claims 1 and 9, the Applicant argues that Madour, Madour provisional application, Shafik, and Shafik provisional application do not disclose determining with a MSC whether a MS performs a dormant handoff into an area of a destination BSC/PCF and providing information of the dormant handoff from the MSC to an original BSC/PCF, when the mobile station performs the dormant handoff. The Examiner respectfully disagrees. Madour provisional applications disclose a dormant handoff, which provides a connection to new BSC/PCF as shown in a figure on page 3. Shafik provisional application discloses notifying MSC, at dormant handoff, that the packet data is dormant by receiving the location update message. The Examiner concludes that the rejection of claims 1 and 9 is proper.

Conclusion

12.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Hong Cho whose telephone number is 571-272-3087.

The examiner can normally be reached on Mon-Fri during 7 am to 4 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Hassan Kizou can be reached on 571-272-3088. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-3088.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR. Status

information for unpublished applications is available through Private PAIR only. For

more information about the PAIR system, see http://pair-direct.uspto.gov. Should you

have questions on access to the Private PAIR system, contact the Electronic Business

Center (EBC) at 866-217-9197 (toll-free).

Hong Cho
Patent Examiner
2/20/2006

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